

REMARKS

In the Office Action, Claims 17-29 were examined and stand rejected. In response to the Final Office Action, no claims are amended, no claims are cancelled and no claims are added. Applicants respectfully request reconsideration of pending Claims 17-29, in view of the following remarks.

I. Claims Rejected Under 35 U.S.C. §102

The Patent Office rejects Claims 17, 19-21, 23 and 25-29 under 35 U.S.C. §102(b) as being anticipated by Japanese Patent No. 401220839 to Fujihira et al. ("Fujihira"). Applicants respectfully traverse this rejection.

Regarding Claim 17, Claim 17 recites the following claim features of an apparatus, which are neither taught nor suggested by either Fujihira or the references of record:

an oxide layer formed directly on a surface of the substrate;
an adhesion layer formed on a surface of said oxide layer by treating said surface of said oxide layer with a gas; and
a first passivation layer formed on said adhesion layer, said first passivation layer and said adhesion layer including at least one common chemical element.
(Emphasis added.)

According to the Patent Office, Fujihira teaches:

c) a first passivation layer (9) formed on said adhesion layer, said first passivation layer and said adhesion layer including at least one common chemical element (for example: *See*, Abstract on pg. 2 of translation). (*See*, pg. 2, ¶5 of Office Action mailed December 22, 2004.)

After reviewing the entire specification of Fujihira, Applicants respectfully disagree with the Patent Office's contention. Specifically, as illustrated with reference to FIGS. 1 and 2 of Fujihira, the SiN layer 9, as shown in FIG. 2 of Fujihira, is formed on a thin film 11, which is directly formed on a substrate 10. (*See*, pp. 6 and 7 of translation of Fujihira.) This example is captured by Claim 2 of Fujihira.

Conversely, Claim 1 of Fujihira, as shown on pg. 2 of the translation, captures the features of FIG. 1 of Fujihira. As shown in FIG. 1, a silicon oxide layer 8 is formed directly on the surface of a substrate 10. A thin film 11 is formed on the silicon oxide layer 8. (*See*, pg. 2 of translation of Fujihira.) (*See*, pg. 6 of translation of Fujihira.)

Applicants respectfully submit that the teachings of Fujihira are limited to a two-layer stack comprised of either a thin film 11 formed on a silicon oxide layer 8, directly formed on a substrate 10 (*See*, FIG. 2); or a silicon nitride layer 9 formed on a thin film layer 11, which is directly formed on a substrate 10 (*See*, FIG. 1). (*See*, pp. 6 and 7 of translation of Fujihira.) Hence, Applicants respectfully submit that Fujihira fails to disclose a three-layer stack, as recited by Claim 17, that

includes an oxide layer formed directly on a substrate, an adhesion layer formed on the oxide layer and a first passivation layer formed on the adhesion layer.

Here, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of anticipation since Fujihira fails to disclose a three-layer stack including an oxide layer formed directly on a substrate, an adhesion layer formed on the oxide layer and a first passivation layer formed on the adhesion layer, as recited by Claim 17.

Consequently, Applicants respectfully submit that Claim 17 is patentable over Fujihira, as well as the references of record. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claim 17.

Regarding Claims 19-21, Claims 19-21, based on their dependency from Claim 17, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claims 19-21.

Regarding Claim 23, Claim 23 recites the three-layer stack, which is neither taught nor suggested by either Fujihira or the references of record:

a silicon dioxide insulating layer;
a silicon oxynitride adhesion layer formed on a surface of said silicon dioxide insulating layer by treating said surface of said silicon dioxide insulating layer with a gas; and
a silicon nitride hard passivation layer formed directly on a surface of said silicon oxynitride adhesion layer. (Emphasis added.)

For at least the reasons described above, the three-layer stack, as recited by Claim 23, is neither taught nor suggested by either Fujihira or the references of record. Specifically, Fujihira teaches a two-layer stack that is comprised of a thin film layer 11 formed on a silicon oxide film layer 8, which resides on the surface of the substrate 10 (See, FIG. 1), or a two-layer stack comprised of a silicon nitride film 9, which is formed on a surface of a thin film 11, which resides on the surface of a substrate 10. (See, FIG. 2 and pp. 6 and 7 of translation of Fujihira.)

Accordingly, for at least the reasons described above, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of anticipation since Fujihira fails to disclose the three-layer stack, as recited by Claim 23. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claim 23.

Regarding Claims 25 and 26, Claims 25 and 26, based on their dependency from Claim 23, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §102(b) rejection of Claims 25 and 26.

Regarding Claim 27, Claim 27 recites the following claim feature, which is neither taught nor suggested by either Fujihira or the references of record:

a composite film formed on the substrate, the composite film comprising:
a first layer comprising silicon dioxide,

a second layer formed from a modification of a portion of the first layer, and
a third layer of a material different than a material of the second layer,
wherein the second layer is disposed between the first layer and the third layer, and
wherein the second layer and the third layer comprise one common chemical element other than silicon; and
wherein the third layer is a passivation layer formed on the second layer. (Emphasis added.)

For at least the reasons described above, the two-layer stack, as taught by Fujihira, fails to disclose each of the above-recited features of Claim 27. Hence, for at least the reasons described above, the Patent Office is prohibited from establishing a *prima facie* case of anticipation of Claim 27 in view of the prior art reference of Fujihira, since Fujihira fails to disclose each and every element recited by Claim 27.

Consequently, Claim 27 is patentable over Fujihira, as well as the references of record. *Id.* Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claim 27.

Regarding Claims 28 and 29, Claims 28 and 29, based on their dependency from Claim 27, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejection of Claims 28 and 29.

II. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects Claims 17, 19-21, 23 and 25-29 in the alternative, under 35 U.S.C. §103(a) as obvious over Fujihira. Applicants respectfully traverse this rejection.

Regarding Claim 17, Applicants respectfully submit that Claim 17 includes the above-described features recited with regards to the §102(b) rejection of Claim 17. These features include the three-layer stack comprised of an oxide layer, an adhesion layer and a first passivation layer.

In contrast to such features, Fujihira teaches the two-layer stack comprised of a thin film 11 formed on a silicon oxide film 8, which is disposed on a surface of a substrate 10 (*See*, FIG. 1); or a two-layer stack, which is comprised of a silicon nitride film formed on a thin film 11, which resides on a surface of a substrate 10. (*See*, FIG. 2 and pp. 6 and 7 of translation of Fujihira.)

Hence, Applicants respectfully submit that Fujihira fails to disclose each and every element of Claim 17. Furthermore, the Patent Office has not identified a suggestion of a three-layer stack, as recited by Claim 17, that includes an oxide layer formed directly on a substrate, an adhesion layer formed on the oxide layer and a first passivation layer formed on the adhesion layer.

As specifically described within Fujihira:

When utilizing SiO_xN_y with a GaAs substrate, as in these working examples, the properties of the thin film can be made to be more similar to those of a SiO_2 film or a SiN film by varying the composition ratios of SiO_xN_y , and the strength of the adhesion can therefore be controlled even if the substrate material or electrode material is changed. (Fujihira, pg. 7, ¶1.) (Emphasis added.)

Applicants respectfully submit that based on the cited passage above, the variation of properties of the SiO_xN_y material, as taught by Fujihira, obviates the need for a three-layer stack, as recited by Claim 17. Hence, based on the passage above, Applicants respectfully submit that the teachings of Fujihira are limited to the two-layer stacks, as shown in FIGS. 1 and 2 of Fujihira. Hence, the Patent Office has not pointed to any motivation for a structure, as in Claim 17.

Accordingly, Applicants respectfully submit that the Patent Office fails to establish a *prima facie* case of obviousness of Claim 17, since the teachings of Fujihira, combined with the skill in the art, would fail to disclose each of the above-recited features of Claim 17.

Therefore, Applicants respectfully submit that Claim 17 is patentable over the combination of Fujihira, as well as the skill in the art. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 17.

Regarding Claims 19-21, Claims 19-21, based on their dependency from Claim 17, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 19-21.

Regarding Claim 23, Applicants respectfully submit that the three-layer stack, as recited by Claim 23, is neither taught nor suggested by Fujihira, as well as the references of record. As indicated above (*See*, pg. 7, ¶1 of translation of Fujihira), the teachings of Fujihira are limited to a two-layer stack comprised of a thin film 11 and a silicon oxide 8 (*See*, FIG. 1) or an SiN layer 9 formed on a thin film 11 (*See*, FIG. 2) and hence, fail to teach or suggest the three-layer stack, as recited by Claim 23.

Therefore, Applicants respectfully submit that the Patent Office is prohibited from establishing a *prima facie* case of obviousness in view of Fujihira, as well as the skill in the art, since the combination of Fujihira, as well as the skill in the art, fails to teach or suggest each of the above-recited features of Claim 23 and specifically, the three-layer stack, as recited by Claim 23.

Consequently, Claim 23 is patentable over the combination of Fujihira in view of the skill in the art. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 23.

Regarding Claims 25 and 26, Claims 25 and 26, based on their dependency from Claim 23, are also patentable over Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 25 and 26.

Regarding Claim 27, for at least the reasons indicated above, the composite film, which is comprised of first, second and third layers, as recited by Claim 27, is neither taught nor suggested by the two-layer stack, as taught by Fujihira. (See, FIGS. 1 and 2 of translation of Fujihira.)

Accordingly, Applicants respectfully submit that the Patent Office is prohibited from establishing a *prima facie* case of obviousness of Claim 27 over Fujihira in view of the skill in the art, since this combination fails to teach or suggest each of the recited features of Claim 27 and specifically, the composite film including first, second and third layers, as recited by Claim 27

Therefore, Applicants respectfully submit that Claim 27 is patentable over the combination of Fujihira and the skill in the art. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 27.

Regarding Claims 28 and 29, Claims 28 and 29, based on their dependency from Claim 27, are also patentable over the combination of Fujihira, as well as the references of record. Consequently, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 28 and 29.

The Patent Office rejects Claims 18 and 24 under 35 U.S.C. §103(a) as obvious over Fujihira in view of U.S. Patent No. 5,698,456 issued to Bryant et al. ("Bryant"). Applicants respectfully traverse the Patent Office's rejection

Regarding Claims 18 and 24, Claims 18 and 24 depend from Claims 17 and 23, respectively. Applicants respectfully submit that the citing of Bryant fails to rectify the deficiencies of Fujihira, which is limited to a two-layer stack comprised of either a thin film 11 on a silicon oxide film 8 (See, FIG. 1); or a SiN film 9 on a thin film 11 (See, FIG. 2). Therefore, Applicants respectfully submit that both Claims 17 and 23 are patentable over the combination of Fujihira in view of Bryant.

Accordingly, Claims 18 and 24, based on their dependency from Claims 17 and 23, respectively, are also patentable over the combination of Fujihira in view of Bryant. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claims 18 and 24.

The Patent Office rejects Claim 22 under 35 U.S.C. §103(a) as obvious over Fujihira in view of Bryant and U.S. Patent No. 5,807,787 issued to Fu et al. ("Fu"). Applicants respectfully traverse the Patent Office's rejection.

Regarding Claim 22, Claim 22 depends from Claim 17. As indicated above, Claim 17 recites a three-layer stack, which is neither taught nor suggested by the two-layer stack taught by Fujihira. Furthermore, Applicants respectfully submit that the Patent Office's citing of Bryant and Fu fail to rectify the deficiencies of Fujihira, which is limited to a two-layer stack. Hence, Applicants

respectfully submit that Claim 23 is patentable over the combination of Fujihira in view of Bryant and further in view of Fu.

Consequently, Claim 22, based on its dependency from Claim 17, is also patentable over the combination of Fujihira in view of Bryant and further in view of Fu. Therefore, Applicants respectfully request that the Patent Office reconsider and withdraw the §103(a) rejection of Claim 22.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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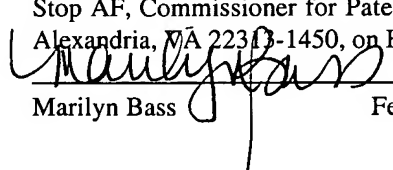
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Marilyn Bass

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